HTRW Center of Expertise - Review Comments

Reviewer Name: Brian Hearty
Discipline: Health Physicist
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Project Location: Florida
Document Name: State of Florida "Residential Survey Plan" for U.S. Environmental Protection Agency Phosphate Mine Initiative.

Comment # 1: The basis for using 30 μR/hr above background as the initial screening level should be better justified. Using EPA default residential values for exposure frequency, indoor and outdoor exposure time fractions, and gamma shielding factor the proposed screening level could result in an external dose approaching 100 mrem/yr. If the actual gamma shielding factor is similar to the default value of 0.4, then the proposed gamma screening level should correspond to indoor gamma exposure rates below the 20 μR/hr value in 40 CFR 192 that has been discussed as a potential ARAR. However, what is not clear from the use of the proposed gamma screening level is any assumed correlation to actual soil concentrations of radium or potentially elevated radon exposure levels.

Comment # 2: The survey plan uses the remedial action levels from NCRP 116 as the basis for determining when EPA will perform necessary remediation. Since the only authority that EPA has for remedial action at the site is CERCLA, EPA should look to promulgated regulations as a source of relevant and appropriate requirements prior to looking to non-promulgated consensus guidance like the NCRP. EPA has used the soil cleanup levels, gamma exposure rate limits, and radon decay product concentration limits from 40 CFR 192 as ARAR for cleanup of Ra-226 at many former mineral extraction sites throughout the United States and at at least one former phosphate mining site in Florida. It is also expected that 40 CFR 192 and associated OSWER guidance will be used during the investigation of the 21 CERCLIS Sites not covered by the State's Residential Survey Plan. Use of 40 CFR 192 as ARAR does allow for the use supplemental standards when certain criteria are met. If the characterization survey shows that indeed a vast majority of the residential area exceeds the 40 CFR 192 soil value and implementation of cleanup at that level would be "grossly disproportionate to health and environmental benefits that may reasonably be anticipated" use of the NCRP remedial action levels in setting supplemental standards could be justified.

Comment # 3: In regard to public exposure to naturally occurring radioactive materials, NCRP 116 also states that "Actions to reduce exposure should not be limited by or to the remedial action level and, following the ALARA principle, levels substantially below the remedial action level may be obtainable and appropriate." By setting the investigation levels so high at this stage of the project, potential innovative risk reduction strategies may be overlooked if the characterization is not carried out at such a level that will allow for an ALARA analysis to be performed and an informed risk management decision to be made.